UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,490	10/07/2003	Katsuhiko Noguchi	03169	4037

23338 7590 08/23/2005

DENNISON, SCHULTZ, DOUGHERTY & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER	
ROY, SIKHA	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/679,490	NOGUCHI ET AL.	
	Examiner	**Art Unit**	
	Sikha Roy	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 October 2003_.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-17_ is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☐ Claim(s) _1-15_ is/are rejected.
7)☒ Claim(s) _16 and 17_ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _07 October 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☒ All b)☐ Some * c)☐ None of:
1.☒ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The disclosure is objected to because of the following informalities:

Page 7 line 28 'case 1c' should be replaced with -- case 1--.

In the abstract, the title 'EMMITTIND DEVICE' should be changed to --EMITTING DEVICE --.

Appropriate corrections are required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

Claim 17 is objected to because of the following informalities:

The language of the claim 'cover member is provided by separating from a cover member assembly' is not very clear. For continuing examination 'the cover member is a part of a cover member assembly' is considered.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-~~15~~ 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,576,930 to Reeh et al., and further in view of U.S. Patent 6,657,382 to Nagai et al.

Regarding claim1 Reeh discloses (Fig. 1 column 11 lines 18- 24,50-65) a white light emitting semiconductor device comprising a blue light emitting semiconductor body 1, a cover member (encapsulation) 5 covering the blue light emitting element, fluorescent material 6 mixed in the encapsulation 5 for converting wavelength of the light emitted from blue light emitting element to white-light-emitting components.

Claim 1 differs from Reeh in that Reeh does not exemplify luminance reducing material being mixed in the cover member.

Nagai in analogous art of LED display device discloses (column 10 lines 21-25, 37- 65) coloring material including inorganic pigment with carbon black can be mixed with encapsulating material on an LED. It is noted that black pigment inherently absorbs radiation and hence reduces luminance. Nagai further discloses that using this black pigment the display contrast can be radically improved and any LED discoloration due to light degradation can be minimized.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include a luminance reducing pigment of black as disclosed by Nagai mixed in the cover member of Reeh for improving the display contrast and reducing LED discoloration.

The recitation 'for adjusting the luminance of the light being mixed in the cover member' has not been given patentable weight because is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Regarding claim 2, Nagai discloses the luminance reducing material is a pigment and does not effect the wavelength conversion.

Regarding claim 3 Reeh discloses (column 6 lines 21-30) the encapsulation is formed from silicone, thermoplastic or thermosetting plastic material which can be treated with luminescent materials in a simple manner.

Regarding claim 4 Reeh and Nagai disclose all the limitations which are same as of claim 1. Furthermore Reeh discloses (Fig. 13 column 12 lines 35-37, column 13 lines 5-15) white light emitting device comprising a case body 8 (base housing) having a recess forming a reflection face (reflector wall) 34, a blue light emitting element 1 mounted on the bottom of the recess, a cover member (5 in Fig. 10) including fluorescent material covering the light emitting face of the case body 8, fluorescent material 6 mixed in the encapsulation 5 for converting wavelength of the light emitted from blue light emitting element to white-light-emitting components.

Regarding claim 5 Reeh discloses in Fig. 13 the electrical terminals 2,3 optionally designed as reflector well forms a holding portion on which the cover member is mounted.

Regarding claim 6 it is clearly evident from Fig. 13 (column 13 lines 5-15) the recess is formed into a cup shape (well) 34 having an inclination surface open to a light emitting direction and the cover member has an inclined peripheral wall so as to be engaged with the inclination surface (reflector well filled with the luminescence conversion encapsulation) of the recess.

Regarding claim 7 Reeh discloses in Fig. 13 a shoulder (2,3) formed in the recess of the case body 8 for holding the cover member.

Regarding claim 8 Reeh discloses (Figs. 1,13 column 11 lines 45-50) the blue light emitting semiconductor element is mounted on the bottom of the recess by face down (fixed by back-side contact by means of an electrically conductive bonding agent) boding.

Regarding claim 9 Reeh discloses (Figs. 9, 13 column 11 lines 25-38) the blue light emitting element is mounted on a substrate 18 by face down bonding to form the light emitting element and the substrate is mounted on the bottom of the recess.

Referring to claim 10 Reeh discloses (column 2 lines 42-48) the blue light emitting element is a semiconductor LED having an active InGaN semiconductor layer.

Regarding claim 11 Reeh discloses (column 11 lines57-59) the fluorescent material is of YAG (YAG : Ce) group.

Regarding claim 12 Nagai discloses the luminance-reducing material is a pigment of black.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,576,930 to Reeh et al., U.S. Patent 6,657,382 to Nagai et al. and further in view of JP 2003-163378 to Horiuchi et al.

Regarding claim 13 Reeh and Nagai disclose all the limitations which are same as of claim 4 but fail to disclose the case body comprising a pair of metal cores, which are opposed to each other interposing an insulation member the surface of the metal cores being coated with a metal plating having high reflectance.

Horiuchi in analogous art of light emitting diode discloses (Figs. 1,2 sections [009], [0010], [0022] – [0025] in English translation) surface mount light emitting device comprising a pair of metal cores which are opposed to each other interposing an insulating member 2 and the surface 1c of the metal cores covered with reflective film formed by silver plating. Horiuchi discloses this configuration provides dependability by preventing any unreliableness which may occur due to breaking of the lead wire when the metal core in single piece undergoes change of atmospheric temperature. Furthermore it provides excellent heat dissipation.

Therefore it would have been obvious to one of ordinary skill in the art a the time of invention to modify the case body of Reeh and Nagai by one comprising a pair of metal cores which are opposed to each other interposing an insulating member 2 and the surfaces covered with reflective film as taught by Horiuchi for providing excellent heat dissipation and dependability by preventing any unreliableness which may occur due to breaking of the lead wire when the metal core in single piece undergoes change of atmospheric temperature.

Regarding claim 14 Horiuchi discloses (English translation sections [0023], [0024]) the metal core is made of high heat conductive material like Mg, Al , Cu or the like and the surface of the metal core is coated with reflective film of silver.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,576,930 to Reeh et al., U.S. Patent 6,657,382 to Nagai et al. and further in view of U.S. Patent 6,828,590 to Hsiung.

Claim 15 differs from Reeh and Nagai in that Reeh and Nagai do not exemplify the cover member having arms, the arms being engaged with grooves formed in the case body.

Hsiung in same field of endeavor discloses (Figs.2 and 4 column 3 lines 5-17) the cover member (focusing component) 60 has flanges or arms 62 which are engaged with grooves formed in the housing 50. Hsiung discloses this configuration provides firm positioning of the focusing member in the receiving space of the housing.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the covering member of Reeh and Nagai having arms engaged in the grooves of the case body as suggested by Hsiung for firmly positioning the cover member in the case body.

Allowable Subject Matter

Claims 16 and 17 are objected to as being dependent upon a rejected base claim 15, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 16 the prior art of record neither teaches nor suggests a white light emitting device having all the limitations as claimed in claim 16 and particularly the limitation comprising a projection formed on the arm of the cover member the projection being engaged with an engaging hole formed in the groove of the case body.

Regarding claim 17 the prior art of record neither teaches nor suggests a white light emitting device having all the limitations as claimed in claim 17 and particularly the limitation comprising the cover member being a part of a cover member assembly comprising a plurality of cover members connected by arms.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,576,931 to Furukawa et al. discloses the change in luminous intensity with the amount of diffuser in the encapsulation of a semiconductor light emitting device. U.S. Patent 6,841,933 to Yamanaka et al. discloses silicone resin, silicone rubber or silicone elastomer can be used as silicone for encapsulation of LED.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sikha Roy

Sikha Roy
Patent Examiner
Art Unit 2879